

# AN EVIDENCE-BASED RESEARCH AGENDA FOR ACTION-BASED ENTREPRENEURSHIP EDUCATION

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## Abstract

A growing research stream is ‘action-based’ entrepreneurship education, where students actively engage in entrepreneurship and learning is primarily student-centered rather than teacher-led. In the present paper, we look to the practice of teaching in order to clarify key challenges and identify a future research agenda for entrepreneurship education. The research design revolves around a global forum for venture creation programs which consists of eleven programs in six different countries in Europe and North America. The method involves written material in order to develop a model and later semi-structured interviews based on the model. The present paper builds on previous developments within research and teaching practice regarding action-based entrepreneurship education and suggests that further research should focus on (1) students’ perspective in developing strategies to handle venture creation and academic work simultaneously, (2) strategies to develop curriculum, deliverables and assessment schemes that acknowledge the diversity among students’ venture creation processes, (3) development of tailor-made quality assurance and impact measures and (4) exploring the role of faculty in terms of their prior experience and involvement for students’ learning. We suggest that a future research agenda focus on these four issues from the teachers’ point of view, the learners’ point of view and the institutional point of view in a systematic way. Thereby, the present paper contributes to the research field of entrepreneurship education by providing an evidence-based research agenda for entrepreneurship education.

## 1. Introduction

The research field of entrepreneurship education has developed along several avenues during the last few decades in particular (Fayolle, 2013; Fayolle, Verzat, & Wapshott, 2016; Henry & Lewis, 2018; Katz, 2008; Rideout & Gray, 2013; Verzat, O’Shea, & Jore, 2017). One growing research stream within the field is ‘action-based’ entrepreneurship education (Neck &

Corbett, 2018; Rasmussen & Sørheim, 2006), where students actively engage in entrepreneurship and learning is primarily student-centered rather than teacher-led (Günzel-Jensen & Robinson, 2017; Jones, 2018; Ollila & Williams-Middleton, 2011; Rasmussen & Sørheim, 2006; Verzat et al., 2017). Action-based entrepreneurship education studies contribute to entrepreneurship research addressing areas such as technology transfer (Boh, De-Haan, & Strom, 2016; Lundqvist, 2014; Siegel & Wright, 2015), effectual decision-making (Agogue, Lundqvist, & Middleton, 2015; Politis, Winborg, & Dahlstrand, 2012), new venture teams (Knipfer, Schreiner, Schmid, & Peus, 2018; Nowell, 2017), and many more.

The experiential nature of action-based entrepreneurship education is seen as essential for achieving tacit learning, personal development and self-awareness, to the extent that Timmons (1986) suggests that the only way to learn entrepreneurship is through one's own personal experience. It allows for higher-level learning from highly emotional critical incidents (Cope, 2003), stimulating emergency learning situations, especially when economical and personal stakes are high (Morris, Pryor, & Schindehutte, 2012). But while a promising avenue for both practice and research, action-based entrepreneurship education poses several challenges to design and assessment, compared to traditional entrepreneurship education, stemming mainly from the required involvement of activities outside a controlled learning space (Johannisson, 2016; Klapper, Feather, Refai, Thompson, & Fayolle, 2015; Nabi, Fayolle, Lyon, Krueger, & Walmsley, 2017; Verzat et al., 2017). Inherent tensions come from the combination of 'real' venture creation (Aadland & Aaboen, 2018; Lackéus & Williams Middleton, 2015) with education involving curriculum, student assessment and specific (required) learning objectives (Hägg & Kurczewska, 2016; Kolb & Kolb, 2005; Kozlinska, 2016; Neck & Greene, 2011). Neck and Corbett (2018) argue that teaching has outpaced research when it comes to understanding how to design education with assessments of what we intend students to learn, and only limited attention has aimed to address the specific challenges of entrepreneurship education emphasizing venture creation (Lackéus, Lundqvist, & Williams Middleton, 2011). The advancement of practice and experiential-based teaching (sometimes even delivered outside the formal education) trains skills but can lack connectivity to theoretical ground, such that student is left without foundation for what holds true across different contexts. Thus, the aim of this paper is to contribute to the development of entrepreneurship education as a research field by leveraging recent developments in the action-based entrepreneurship teaching domain.

*In the present paper, we therefore look to the practice of teaching in venture creation programs in order to clarify key challenges and identify a future research agenda for entrepreneurship education.*

In order to address the purpose of the present paper, an empirical study of the current practice and tensions, and future ambitions and challenges of venture creation programs (VCP) is performed. A VCP is a specific type of action-based entrepreneurship education that use a new venture as a vehicle for students' learning in addition to more traditional curricular educational content (Lackéus & Williams Middleton, 2015). Given the position of VCPs as extreme learning spaces, embedding students in the entrepreneurial process and integrating the academic and 'real' worlds, the conditions of these programs pinpoint the central challenges of action-based entrepreneurship education in a particularly pronounced way.

## **2. Analytical Frame of Reference**

VCPs assume a very close connection between what students are exposed to in terms of hands-on entrepreneurial experience (Lackéus and Williams Middleton, 2015), the students' application of entrepreneurial experiences post-graduation, and the curricular components that support both (Lackéus, 2013; Lockyer & Adams, 2014). VCPs can be argued as designed to expose students to the challenges of managing a start-up in order to gain the desired applicable learning outcomes for both current (during study) and future (career) entrepreneurial activity (Johannisson, Landstrom, & Rosenberg, 1998). VCPs have been characterized by the following five elements: (1) experiential learning, (2) interdisciplinary, (3) process-based curriculum, (4) an external network of resources, and (5) contribution to regional economic development (Lackéus and Williams Middleton, 2015).

On a design-level, this implies that the curriculum of action-based entrepreneurship education needs to integrate course material that students need for their entrepreneurial action on a daily basis with course material aiming towards the broader scope of becoming entrepreneurial, for example through reflection (c.f. Hägg & Kurczewska, 2016). Curriculum design needs to ensure that the students do what they need to do in order to learn what they need to learn when working in their ventures (Biggs, 2003). In other words, even though student learning is in focus and the new venture is only a learning vehicle, facilitation needs to be done in order to ensure that the vehicle will continue to exist. In addition, the curriculum also needs to be complemented with an infrastructure including an external network that provides an environment for the ventures and the students. Previous studies have addressed this taking into consideration for example the entrepreneurial ecosystems (Brush, 2014; Toutain, Fayolle, Pittaway, & Politis, 2017; Wright, Siegel, & Mustar, 2017) and the use of expert mentors (Lockett, Quesada-Pallarès, Williams-Middleton, Padilla-Meléndez, & Jack, 2017; St-Jean & Audet, 2012) in order to provide external networks for action-based entrepreneurship education. In summary, the co-existence of venture creation and academic work in the learning in VCPs is a key feature of these specific forms of action-based entrepreneurship education. However, this complicated learning process do not take place in isolation but must be co-created with the students and supported as well as facilitated by faculty and the surrounding ecosystem.

## **3. Research Method**

### **Design & Data Collection**

The method applied involves two levels. The first level is analysis of written material in order to develop a model of important research topics for action-based entrepreneurship education. The second level involves the analysis of semi-structured interviews, which were guided by the topics in the model developed in the first step. The data collection revolves around a global forum for VCPs, which consists of eleven programs in six different countries in Europe and North America. While there are many differences between the programs in their structure, they all share the common approach of using student venture creation as a core component and a vehicle for learning.

### **First Level Analysis: Developing a model**

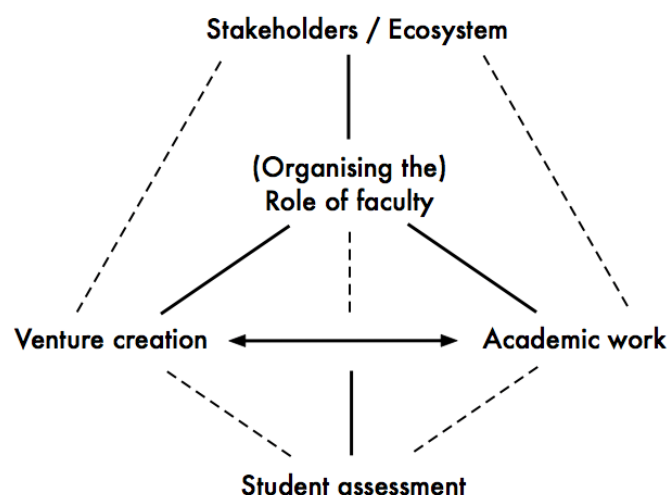
In preparation for VCP workshop, approximately 25 participants representing eleven VCPs were asked to exemplify (1) their current excellence and (2) important challenges for future

development. The managers were free to choose the format of their replies as long as it was written and in English. The total length of the written pre-workshop submissions ranged from half a page to several pages. Text was coded in Nvivo 11 according to a predefined coding scheme based on the analytical frame of reference, as represented in Table 1. Then, representatives from the eleven VCPs were invited to and attended a one-day workshop to discuss current excellence and future challenges. The participants first discussed these topics in smaller groups and then discussed their conclusions in plenum. We were present at this workshop and also at the end, the participants provided summarized notes from their discussions and we also photographed all written material that were used during the workshop. This included post-it notes, draft sketches and presentation posters. The data material from the workshop were digitalized and coded following the same schema in order to identify central topics that emerged during group discussions.

<b><i>Dimension I:</i></b> <b>VCP characteristics (Lackéus and Williams Middleton, 2015):</b>	<b><i>Dimension II:</i></b> <b>Teaching practice focus area</b>	<b><i>Dimension III:</i></b> <b>Excellence vs Challenge</b>
Experiential learning	Excellence	Educational design
Interdisciplinary		
Process-based curriculum	Challenge	Educational objectives
An external network of resources		
Contribution to regional economic development		Educational outcomes

**Table 1:** Coding scheme for the first level analysis.

The coding analysis provided emergent themes use to construct a model. This model summarizes the first level analysis. The model summarizes important research topics in VCPs, as presented in Figure 1.



**Figure 1:** Model for important challenges and tensions based on the first level analysis. The model was the starting point for the eleven semi-structured interviews.

As shown by previous studies, a fundamental tension in VCPs is the tension between academic work and venture creation, as represented in the center of Figure 1. On a basic level, the tension revolves around how venture creation can be integrated in academic work

and how academic work can be integrated in venture creation. The program managers and faculty are continuously managing this tension. Since there are so many factors influencing this tension the optimal levels are never constant and all the highlighted topics in the findings are therefore connected to the balance between academic work and venture creation. When it comes to the faculty role in the venture creation (see Figure 1) it is often discussed in the contexts of idea selection, team formation, research mobilization and view on venture failure. The VCPs then choose different paths on the role of faculty in deciding and designing the situation in order to facilitate learning. There are therefore large differences in whether students' venturing activities are facilitated or required by faculty. Similarly, the VCPs choose different paths when deciding the role of the faculty in the academic work (see Figure 1). Also, there is the topic of how to organize the role of faculty in the integration between venture creation and academic work. Reflection is found to be an important tool in order to accomplish this integration and there are also different views of how to facilitate useful reflection.

The balance between academic work and venture creation is also reflected in student assessment (see Figure 1) and confirms previous research. For example, assessment of learning through the process of venture creation can occur regardless of the results of the venture by assessing level of analysis applied to the process, reflections on application of skills, and the ability to connect the reflections to theories. However, there is additional learning that takes place which is difficult to capture or securitize that it takes place at all. Many VCPs report finding it challenging to primarily assess academic work as a sign of combined learning.

Finally, organizing stakeholders and ecosystem relations (see Figure 1) is a challenging topic in a VCP. The stakeholders and ecosystem are important actors for the learning to take place since they may provide advice as well as guest lectures to the students that enhance their learning, which is in line with previous research. However, there is a challenge bringing these actors into the educational space since they are not always bounded by the same requirements and objectives as the VCP. The faculty therefore can have different roles in mediating and facilitating the contact between the students and these actors.

### *Second Level Analysis: Validating and Further Developing the Model*

After developing the model, we sent the model to the program managers of the eleven VCPs as a ground for face to face or Skype interviews. The interviews aimed at discussing and elaborating upon the findings from the initial analysis. Each interview lasted for about 30-60 minutes and was recorded and then transcribed. In addition, hand-written notes were taken directly during the interviews. The transcribed interview data was analyzed in Nvivo 11 using the elements of the model and the addition of new topics that emerged during the interviews as a coding framework. The findings from analysis of the interview data are presented in the next section.

## **4. Findings**

In this section, the findings from the second level analysis are structured according to the model.

### Integration of Venture Creation and Students' Academic Work

Although the tension between venture creation and academic work was highlighted in the model, the VCP program managers tend to have a clear vision on how they want to integrate venture creation with academic work. The importance of developing entrepreneurs and entrepreneurial skills is emphasized as well as their efforts in ensuring that students are able to critically reflect upon their venture, contextualize their practical experiences and have a theoretical foundation for what they do and experience. The program managers are more or less in agreement regarding this and there also seems to be a tendency to think that their own study program is more academic than the others, as the following quote illustrates:

*"I do not know how it is in other places, but sometimes I get the feeling when I read their articles about entrepreneurship education, that it is a lot of hands on, practical, at the expense of academic, basic things."*

The vision of how the integration should be is not viewed as a challenge in itself:

*"...at the end of the day, they go hand in hand. But I won't say it's a challenge."*

However, a tension between academic work and venture creation exist among the students and the study program managers find it challenging to appropriately support their students in handling this tension during the program. Primarily, three different strategies are used. The first is to provide additional structure to the academic work of the students, the second is to ensure that the students that work in the same teams are aware of each other's ambitions for ventures and academic work and the third is to make sure that the expectations of the students when they enter the program also include academic work. While faculty has found ways to resolve the tension between venture creation and academic work from their own perspective, finding suitable ways to support students in handling the tension is still perceived as challenging. We therefore suggest scaffolding strategies for the student's tension of handling both academic work and venture creation simultaneously for future research in addition to further development of existing strategies.

### Organizing the Role of Faculty in Venture Creation and Academic Work

The role of faculty in venture creation were highlighted in the model and involved for example how new venture teams and ideas should be selected. There are different views about this among the program managers and while some study programs argued that they needed to facilitate learning by ensuring that the teams and ideas would provide learning for the students', others argued that there exists a learning opportunity in choosing your own team and idea. Nevertheless, most program managers argued that they had reached their current way of facilitating the idea and team selection through trial and error and were satisfied with their current solution. The challenging part of the facilitation of venture creation is that the faculty need to facilitate that the students participate in the activities that will be useful for them later or prioritize that meeting that they did not understand the point of until afterwards:

*"students do not always know what is good for them"*

The time limitation of the program can also make some faculty feel that they need to force some student actions in order for the team not to be stuck in the same problem for the entire program. The final aspect of this challenge was formulated in the following way:

*“I really don’t know how to teach them that they have to get their shit done, and no one else is going to do that for them. Attending 400 workshops a week on marketing innovations or whatever it is, is not going to get you that...”*

In other words, the challenge is connected to being able to ensure that the students do not avoid learning experiences and to try to get them to make the decisions that they would have made later at an earlier stage in their venture creation process. We therefore suggest facilitation strategies for the everyday activities in the student ventures for future research.

The role of faculty regarding academic work was the least emphasized by the respondents in terms of challenges. Nevertheless, it is as expected strongly connected to the central position of new venture creation in the programs and leads to challenges that relate to the diverse group of students that enters the programs. The differences within the student group is often about their prior experience with and expectations for writing academic texts and assignments. This again may be amplified by the fact that many programs accept international students where cultural differences also contribute to different student expectations. The cultural differences also come into play as students in the same cohort may have different expectations for how involved faculty should be in outlining the focus and process of for example student theses. Also, the program managers are emphasizing that the processes are very different for the different individuals and teams within a cohort. While some ventures develop fast, other develop slow and there will therefore be different emphasis between venture and academic work as well as types of venture activities and experiences and academic work between the different teams. Simultaneously, the program managers want all the students to have gained more or less the same learning from their processes.

This challenge is handled by providing rather wide structures that the students have to follow, flexibility through for instance the possibility to fill out work sheets that suits your venture’s current state of development or mentoring for individual facilitation, and mechanisms such as diaries for being able to keep track of the learning processes of all students at all times. The challenge connected to this is to have faculty that are able to overview the learning process of the students and balance the roles of mentoring the students while simultaneously demanding deliveries. Program managers emphasize that students’ academic work should be about something that is interesting to them and relevant for their ventures, but at the same time fit within the ‘frames’ of an academic education program. Thus, research that may aid faculty in course design so that deliverables adapt according to students’ venture creation process is suggested for further research.

An important antecedent of the organization of the role of the faculty in the integration between venture creation and academic work is who the faculty is and who the students are. Faculty’s understanding of the totality of the program is an important ability in order for co-creation of learning involving both venture creation and academic work to take place. Different teachers have different background which means different focuses and skills to contribute with, and there is a specific challenge in finding faculty that both really understand

the academic part and the process of an entrepreneur. It is difficult for program managers to find those who 'get it'. Furthermore, entrepreneurship is not a 'nine-to-five' job and neither is being a faculty supporting entrepreneurs. Simultaneously, program managers need to figure out the roles of practitioners in the integration between venture creation and academic work as well as how to qualify practitioners that enter the academic space such as incubation coaches, entrepreneurs-in-residence and guest lectures. This include training the practitioners in understanding the learning components of their feedback and to train the students in how to filter the feedback from the practitioners. We therefore suggest that further research explore the roles of faculty for the different aspects of students' learning process.

### Assessment of Students

Assessment of students present a range of challenges to program managers and their course coordinators. Here again, the central position of the new ventures comes into play since a challenge is both *how* to assess and also *when* to assess. There is broad consensus that students should not be assessed on their ventures' performance as such but rather on the way they reflect about their experience from their ventures. Their way of reflection is meant to assess their learning in terms of development of entrepreneurial competencies and skills. However, the challenge is still *how* to actually do such assessment. Acknowledging the importance of the new ventures in the pedagogical model and also for students' motivation, program managers find a possible conflict between what students' put a significant amount of their efforts into and what faculty will actually regard in their assessment. The challenge is illustrated by one of the program managers:

*"... to start a venture is an important part of the pedagogical model however we do not assess what they achieve and do not achieve. This is a challenge that we clearly have not solved."*

In addition to being able to adjust the assessment to students' venture creation while not measuring it directly, there is also a challenge of *when* to do the assessment. While the curricular courses have a specific beginning and an end following a fixed track, the program managers again find it challenging given that students' ventures may follow different paths at different paces. Therefore, there is a question *when* to assess, since for example at the end of a course, students may have reached different stages in their venture creation processes depending on the nature of the venture they are working on. Therefore, using the same assessment schemes across a student cohort may influence how students are evaluated. Thereby, we suggest that in addition to contribute to curriculum and deliverables that are adaptive to students' processes, further research should be done in order to develop curricular assessment schemes that acknowledge the dynamic nature of students' venture creation processes.

A focus in the model were on faculty's assessment of the students. However, several program managers emphasized the importance of students' assessment of the program, finding challenges in monitoring the continuous development of the program and finding the proper quality assurance measure to use in this process. Faculty strives to ensure that the program develops in the right direction and that the students' assessment of their education is properly taken into consideration. Based on this input, we encourage further research



focusing on the development process of programs and possible tools that might be appropriate in that regard.

#### *Involving and managing stakeholders and ecosystem actors*

There is consensus that program stakeholders and ecosystem actors provide value to the programs, and an example of value added that were highlighted is how they contribute to the legitimacy of the program and the students' ventures. The program managers further emphasize the conflicting interest of the university as an education institution and industry partners. The university expect academic performance from the students while external industry partners may expect new ventures to come out of the program, which can be related to the business model of partners:

*"Some stakeholders might have a stake in the sense that for them venture creation is actually an income further down the line."*

A way to cope with this challenge is to design students' assignments in such a way that they both suit as curricular deliverables while also provide value to stakeholders, where an example is feasibility studies that students can perform as an academic assignment based on some technology provided by an external partner. In turn, the partner may find value in receiving a thorough report about the commercial potential of their technology.

The current challenge of program managers is essentially being able to motivate development of the program's network through communication of the program's value while also being very clear to stakeholders and ecosystem actors about the approach being a learning process that use real ventures as a learning vehicle, meaning that successful ventures may develop but it is not the core focus of faculty. Thus, there is a communication challenge regarding involving and managing very different stakeholders and ecosystem actors as they value different aspects of the program. They are interested in different impact measures and the alignment of impact measures for the program is an important challenge. Methods for evaluating and reporting on VCPs is therefore an important topic for future research, and we therefore suggest further research in developing impact measures that suits the different types of stakeholders the programs often have.

## **5. Discussion**

When the reality is brought into the learning space, many of the general research agendas of entrepreneurship, such as the challenge of contextualization on entrepreneurship (see further Welter 2011; Welter, Gartner & Wright, 2016), need to be interpreted using the educational lens. This results in a new research agenda building from those focusing on entrepreneurship in general but with the added dimension of education and learning.

In previous research in action-based entrepreneurship education, the focus has been on teachers' challenges handling the tension between venture creation and academic work (Aadland & Aaboen, 2018; Lackéus & Williams Middleton, 2015). The findings in the paper suggest a shift towards strategies that can facilitate students in handling the both venture creation and academic work simultaneously. This implies that the tension between venture creation and academic work needs to be further explored. Primarily, it needs to be explored

in a more systematic way so that explorations of similar issues are made from the teachers' point of view, the learners' point of view and the institutional point of view. Furthermore, such explorations may outline areas for research development when it comes to continuing to integrate way of assessing experiential learning into education (see further Lackéus and Williams Middleton, 2018). Moreover, further systematic ways of exploring the tension between venture creation and academic work may also provide insights for other action-based non-entrepreneurship educations as well and help students in higher education become mature learners rather than silo learning from theory and learning from practice.

Furthermore, the field has reached broad consensus about the importance of experiential learning and reflection (Cope, 2003; Hägg & Kurczewska, 2016), however the findings suggest that further research efforts should be done in order to develop strategies that ensures that students will get the appropriate learning experiences even though each venture creation process is fundamentally different from another. Along the same lines is the finding that there is a need to build mechanisms to adapt curriculum, deliverables and assessment schemes to students' venture creation processes both regarding *how* they are designed but also *when* they are introduced. The findings confirm the importance of stakeholder involvement and the provision of value to the university ecosystem and external actors (Lackéus & Williams Middleton, 2015; Siegel & Wright, 2015; Toutain et al., 2017; Wright et al., 2017). There is however still a challenge in communicating value to the diverse set of relevant actors and the development of impact measures that suits the programs should be emphasized on the research agenda. In addition, the findings suggest that the role of faculty in terms of their prior experience and involvement for students' learning should be explored as well as aiding faculty in identifying and developing appropriate tools for the continuous development of action-based entrepreneurship education programs.

## **6. Conclusion & Suggested Research Agenda**

Building upon research highlighting entrepreneurship as method (Sarasvathy & Venkataraman, 2011), we address a future research agenda more specifically in regard to how to draw clearer connection between the tacit, specific and also mundane skills of entrepreneurial practice and the underlying theories.

The present paper builds on previous developments within research and teaching practice regarding action-based entrepreneurship education and suggests that further research should focus on (1) students' perspective in developing strategies to handle venture creation and academic work simultaneously, (2) strategies to develop curriculum, deliverables and assessment schemes that acknowledge the diversity among students' venture creation processes, (3) development of tailor-made quality assurance and impact measures and (4) exploring the role of faculty in terms of their prior experience and involvement for students' learning. Hence, we suggest that a future research agenda focus on these four issues from the teachers' point of view, the learners' point of view and the institutional point of view in a systematic way. Thereby, the present paper contributes to the research field of entrepreneurship education by providing an evidence-based research agenda for entrepreneurship education.

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